

TABLE 2.—Free-air resultant wind's (m. p. s.) during November 1925

Altitude m. s. l. (meters)	Broken Arrow, Okla. (233 meters)				Drexel, Nebr. (396 meters)				Dus West, S. C. (217 meters)				Ellendale, N. Dak. (444 meters)				Groesbeck, Tex. (141 meters)				Royal Center, Ind. (225 meters)			
	Mean		8-year mean		Mean		11-year mean		Mean		5-year mean		Mean		8-year mean		Mean		8-year mean		Mean		8-year mean	
	Dir.	Vel.	Dir.	Vel.	Dir.	Vel.	Dir.	Vel.	Dir.	Vel.	Dir.	Vel.	Dir.	Vel.	Dir.	Vel.	Dir.	Vel.	Dir.	Vel.	Dir.	Vel.	Dir.	Vel.
	Dir.	Vel.	Dir.	Vel.	Dir.	Vel.	Dir.	Vel.	Dir.	Vel.	Dir.	Vel.	Dir.	Vel.	Dir.	Vel.	Dir.	Vel.	Dir.	Vel.	Dir.	Vel.	Dir.	Vel.
Surface.....	S. 26°W.	2.6	S. 42°W.	1.5	S. 51°W.	1.4	S. 78°W.	1.4	N. 24°W.	0.8	N. 63°W.	0.7	N. 62°W.	2.7	N. 54°W.	2.4	S. 21°E.	0.3	N. 66°E.	0.2	S. 56°W.	2.7	S. 49°W.	2.0
250.....	S. 28°W.	2.5	S. 41°W.	1.5	S. 51°W.	1.4	S. 78°W.	1.4	N. 28°W.	0.8	N. 63°W.	0.7	N. 62°W.	2.7	N. 54°W.	2.4	S. 33°E.	0.8	S. 57°W.	0.5	S. 55°W.	3.0	S. 54°W.	2.7
500.....	S. 45°W.	4.4	S. 35°W.	2.6	S. 61°W.	2.4	S. 82°W.	2.1	N. 34°W.	0.8	N. 81°W.	1.3	N. 64°W.	3.0	N. 64°W.	2.6	S. 21°E.	2.2	S. 9°E.	1.3	S. 69°W.	6.8	S. 60°W.	5.0
750.....	S. 65°W.	5.4	S. 40°W.	3.3	S. 80°W.	3.8	S. 80°W.	3.7	N. 69°W.	1.4	N. 81°W.	1.9	N. 63°W.	4.6	N. 64°W.	4.1	S. 16°W.	2.3	S. 21°W.	1.9	S. 68°W.	8.0	S. 64°W.	6.4
1,000.....	S. 62°W.	6.0	S. 52°W.	3.9	N. 88°W.	5.0	N. 82°W.	5.1	N. 81°W.	2.3	N. 89°W.	2.6	N. 61°W.	5.9	N. 66°W.	5.0	S. 27°W.	3.3	S. 40°W.	2.6	S. 31°W.	8.8	S. 73°W.	7.2
1,250.....	S. 70°W.	6.1	S. 60°W.	4.7	N. 84°W.	5.9	N. 86°W.	6.0	N. 74°W.	3.6	N. 84°W.	3.9	N. 63°W.	6.0	N. 65°W.	5.9	S. 41°W.	3.6	S. 56°W.	3.3	S. 75°W.	5.7	S. 75°W.	7.4
1,500.....	S. 80°W.	6.1	S. 69°W.	4.4	N. 77°W.	7.1	N. 85°W.	7.0	N. 79°W.	4.8	N. 86°W.	3.2	N. 66°W.	7.2	N. 65°W.	7.1	S. 68°W.	4.2	S. 67°W.	3.9	S. 85°W.	11.8	S. 83°W.	10.1
2,000.....	S. 85°W.	7.1	S. 75°W.	6.7	N. 70°W.	10.6	N. 81°W.	8.4	S. 87°W.	7.0	S. 85°W.	7.4	N. 71°W.	9.8	N. 66°W.	8.9	N. 87°W.	5.2	S. 81°W.	5.2	S. 85°W.	11.8	S. 83°W.	10.1
2,500.....	S. 88°W.	8.4	S. 81°W.	7.5	N. 70°W.	10.9	N. 79°W.	10.1	N. 79°W.	9.1	S. 87°W.	8.9	N. 66°W.	11.4	N. 68°W.	11.0	S. 86°W.	6.6	S. 85°W.	6.9	S. 84°W.	13.5	S. 85°W.	11.7
3,000.....	N. 79°W.	8.9	S. 82°W.	8.6	N. 73°W.	11.7	N. 79°W.	11.2	S. 36°W.	14.3	S. 84°W.	10.1	N. 70°W.	12.2	N. 69°W.	12.8	S. 79°W.	10.9	S. 85°W.	8.6	S. 87°W.	14.9	N. 88°W.	13.1
3,500.....	N. 78°W.	9.4	S. 83°W.	8.2	N. 83°W.	13.9	N. 77°W.	12.4	S. 22°W.	11.0	S. 84°W.	11.7	N. 67°W.	14.0	N. 67°W.	13.6	S. 73°W.	11.7	S. 75°W.	10.5	N. 78°W.	16.5	N. 84°W.	13.0
4,000.....	N. 83°W.	7.4	S. 84°W.	10.5	N. 80°W.	11.9	N. 81°W.	13.4	S. 45°W.	12.0	S. 86°W.	13.4	N. 76°W.	14.1	N. 67°W.	13.3	.....	.....	.....	.....	N. 82°W.	17.2	W.	12.6
4,500.....	N. 83°W.	7.4	S. 84°W.	10.5	N. 80°W.	11.9	N. 81°W.	13.4	S. 45°W.	12.0	S. 86°W.	13.4	N. 76°W.	14.1	N. 67°W.	13.3	.....	.....	.....	.....	N. 82°W.	17.2	W.	12.6
5,000.....	N. 68°W.	19.2	N. 83°W.	10.2	N. 83°W.	8.9	N. 85°W.	13.5	S. 45°W.	12.0	S. 86°W.	14.2	N. 66°W.	11.5	N. 61°W.	15.4	.....	.....	.....	.....	S. 87°W.	16.9	S. 84°W.	13.0
5,000.....	N. 68°W.	19.2	N. 83°W.	10.2	N. 83°W.	8.9	N. 85°W.	13.5	S. 45°W.	12.0	S. 86°W.	14.2	N. 66°W.	11.5	N. 61°W.	15.4	.....	.....	.....	.....	W.	20.0	W.	20.0

THE WEATHER ELEMENTS

By P. C. DAY, In Charge of Division

PRESSURE AND WINDS

Following a record-breaking month in many weather particulars, November, 1925, assumed more nearly the conditions expected in the last month of autumn, and, except in a few instances, was uneventful from a meteorological standpoint.

Cyclonic activity was confined mainly to the first half of the month, while anticyclones were in evidence during much of the latter half.

The month opened with an area of precipitation over the East Gulf and South Atlantic States, and as this moved northeastward heavy rains prevailed over limited areas near the coast from Georgia to Virginia. By the morning of the 4th a cyclone had advanced into the middle Plains, and, moving northeastward to Lake Superior, brought general rains to most of the central valleys, with some unusually heavy falls in east Texas. Immediately following this another cyclone overspread the territory somewhat south of that preceding, and it, too, moved northeastward, attended by general precipitation over nearly all central and eastern districts, heavy rains falling over portions of the Ohio and lower Mississippi Valleys, and local light snows in portions of the upper Lake region.

The third important cyclone developed off the middle Gulf coast during the 11th and by the morning of the 12th was central over northern Alabama, whence it moved to the lower lakes and northeastward during the following two days, as a severe storm attended by widespread and locally heavy rains over all sections from the Mississippi River eastward, and by high winds along the coast from Chesapeake Bay northward. A fourth cyclone was forming over the Southwest as this moved into the lower St. Lawrence Valley and by the middle of the month had advanced to the Ohio Valley, whence it moved northeastward. This, too, was attended by precipitation over much of the country from the Mississippi River eastward, though the amounts were generally less than fell in the preceding storm, except over portions of New England. Light snow fell in connection with this storm over much of the Lake region, Ohio Valley, and into New England.

The remainder of the month was without important cyclonic storms until about the 26th, when low pressure overspread northeastern Texas and during the following

two days moved to New England, attended by precipitation over much of the country from the Mississippi Valley eastward.

As the month closed, a tropical storm passing over the Florida Peninsula gave some of the heaviest rains ever known over the more southern portions. At Miami a total fall of more than 15 inches occurred, 14.10 inches falling in 14 hours. A more extensive description of this storm will appear in the December issue of this REVIEW.

Anticyclones were confined mainly to western and northern districts during the first half of the month, but thereafter they were the dominant feature and extended into all portions, several reaching well into the South.

The monthly averages of pressure were highest over the middle and northern plateau, with a secondary high area over the Southeastern States, and they were above normal in all parts, save for a narrow area from Lake Superior to eastern Montana. Over southern Canada the average pressures were mainly below normal and this condition probably extended into the northern districts and over Alaska as well.

The surface winds attending the frequent cyclones were occasionally high, particularly about the 13th and 14th along the North Atlantic coast and in the lower Lake region; elsewhere high winds were mainly local and the far West was unusually free from severe storms for a late fall month.

The details of the more important wind and other storms appear at the end of this section.

TEMPERATURE

Important changes in temperature were rather frequent due to rapid pressure variations, but on the whole there were no great extremes, and the monthly averages were mainly not far from normal. A moderately cold area covered the Southeastern States and it was cooler than normal in all other districts from the Mississippi Valley eastward, save along the northern border, over much of New England and in southern Florida. It was cooler than normal also over the plateau region and portions of the southern Plains.

Average temperatures were above normal on the Pacific coast, along the entire northern border, over much of New England, and from the middle Plains northward into Canada, the departures increasing toward the north where in portions of the Northwest Provinces, the month was decidedly warm with the probability that this condition extended far to the northward and into Alaska.

where press and other reports indicate the persistence of unusual warmth.

The warmest periods were about the first over the districts from the Rocky Mountains westward, from the 5th to 7th in the Ohio Valley and to the southward and southeastward, and near the end of the second decade over most northern districts.

The coldest periods were from the 6th to 9th over the Missouri, middle Mississippi, and lower Ohio Valleys, from the 22d to 24th over the lower Mississippi Valley and eastward, and from the 28th to 30th from the Great Lakes eastward. West of the Rocky Mountains they were scattered through the month, depending frequently upon the opportunities for high night radiation.

The lowest temperature reported was 21° below zero in the mountains of Colorado and temperatures nearly as low were observed in northern New England.

East of the Rocky Mountains temperatures below zero were observed as far south as Missouri, and freezing weather occurred at some point during the month in all the States.

PRECIPITATION

From the Rocky Mountains eastward the bulk of the precipitation occurred during the first half of the month, and over a large area from the southern Plains northward to the lower Lakes, and eastward nearly to the Atlantic coast the amounts were generous and mainly well above the normal, particularly over portions of northern Louisiana and near-by areas in Texas, and over western and southeastern Florida.

From the upper Lakes westward to and including the Missouri Valley, over the plateau and Pacific coast States, and from central Texas westward, except in portions of southern California, the precipitation was less than normal and materially so in portions of northern California and the far Northwest.

The moderately heavy rains in the western portion of the Carolinas and near-by areas, where severe drought

existed in the late summer and early fall months, greatly improved the water supply, though the total fall for the year is still far short of the normal. At points in Florida the monthly totals were the greatest of record for November, notably at Miami, where the fall for a single 24 hours at the end of the month exceeded the entire fall of any previous November.

SNOWFALL

Following a month of unusually early, heavy and widely distributed snowfall, the amounts for November were frequently comparatively small and the territory covered considerably less extensive.

From the Rocky Mountains eastward the amounts were mainly small and confined principally to the northern half. Maximum depths ranged up to 12 inches at points in the upper Lake region and to two feet in extreme northern Maine. Elsewhere the totals were mainly only a few inches, although locally in eastern Iowa and western Illinois the falls were the heaviest of record for November, and there were local heavy falls in northern Kansas and eastern Colorado. West of the Rocky Mountains the total snowfall was mainly greater than in October, particularly over the northern districts and in the mountains of central California, though here the amounts were mainly light and less than normal.

By the end of the month the ground was free of snow except in extreme northern New England, over the upper Lake region and westward to the Dakotas, and at some of the high elevations of the western mountains.

RELATIVE HUMIDITY

This element had percentages above normal, though not materially so, over much of the country, the chief exceptions being portions of the Atlantic coast States, from the upper Lakes westward to the Rocky Mountains, and from Texas to California, where the percentages were somewhat less than normal.

SEVERE LOCAL HAIL AND WIND STORMS, NOVEMBER, 1925

[The table herewith contains such data as have been received concerning severe local storms that occurred during the month. A more complete statement will appear in the annual report of the Chief of Bureau]

Place	Date	Time	Width of path, yards	Loss of life	Value of property destroyed	Character of storm	Remarks	Authority
Whitefish Point, Mich. (10 miles north of).	5-6					Gale	Tow barge foundered in Lake Superior.	Official, U. S. Weather Bureau.
Palestine, Tex.	7	A. m.				Thunderstorm	A few trees, telegraph and telephone poles blown down; plate glass windows broken.	Do.
Wilson County, Tenn. (central part of).	7	6:30 p. m.	200		\$10,500	Small tornado	Heavy loss of livestock; some crop and property damage over path 10 miles long.	Do.
Canastota, N. Y.	7				100,000	High wind	Main building of the Douglass Pectin Co., wrecked.	Do.
Syracuse, N. Y.	7					High wind	Trees, signs, and roofs damaged.	Do.
Polk and Marion Counties, Oreg.	11	A. m.				Small tornado	Damage to a few buildings and trees over path about 5 miles long.	Do.
Buffalo, N. Y.	15			4		Severe wind	Considerable damage to signs and windows; three barges wrecked off Buffalo harbor.	Do.
Philadelphia, Pa.	16					Squall	Floating grain elevator capsized in Delaware River. Tug caught under it sunk; crew rescued.	Daily News (New York, N. Y.).
Yonkers, N. Y.	16					Wind	High wall blown down wrecking garage and auto. Several persons injured.	Herald Tribune (New York, N. Y.).
Lexington, Mich. (near)	22			1		Squall	A man in small boat swept out into Lake Huron.	Official, U. S. Weather Bureau.
Blytheville, Ark.	26	2:30 p. m.	33		\$4,000	Small tornado	Some small buildings destroyed. Path 10 miles long.	Do.
Charlotte, Tenn. (near)	26	5 p. m.			5,400	do	Property damage over path 6 miles long; 3 persons injured.	Do.
Bee Branch, Ark.	26	5:30 p. m.				Heavy hail	Very large stones; windows broken in places.	Do.
Florida	30			4		Tropical disturbance.	Much damage in various sections by wind and rain; public utilities hampered; a number of persons injured. Storm continued into December.	Official, U. S. Weather Bureau; Tribune (Tampa, Fla.); Telegraph (Tampa, Fla.).